<u>REMARKS</u>

Claims 1, 3 and 9-13 are pending in this application, with Claim 1 amended and Claims 2 and 4-8 cancelled. The Applicant respectfully requests reconsideration and review of the application in view of the amendment and the following remarks. By the foregoing amendment, no new matter has been added.

The Examiner originally rejected Claims 1 under 35 U.S.C. § 102(b) as being anticipated by Atwater et al. (U.S. Pat. No. 6,175,551). *See* Office Action dated May 4, 2007. In response, the Applicant pointed out that Atwater et al. ("Atwater") does not disclose or suggest a pulse sequence shaping filter, or more particularly:

> A method of reducing the peak-to-average power ratio (PAPR) of a modulated baseband signal … comprising the steps of: detecting peaks in the modulated baseband signal that exceeds a threshold (C), and generating a pulse sequence signal (p[m]) therefrom; and ***applying a pulse sequence shaping to filter the pulse sequence signal for generating a peak-cancellation signal (c[m]); wherein the pulse sequence shaping is designed such that its pass-band is limited to a frequency-domain gap between the edge of an information-carrying frequency bandwidth of the modulated baseband signal and an edge of a frequency band for the baseband signal defined by a spectral mask specifying a maximum tolerable out-of-band emission.***

See Response dated August 1, 2007 (emphasis added). In the present Office Action, the Examiner agreed that Atwater does not disclose this limitation, but stated that this limitation is disclose in Jin (U.S. Pub. No. 20020159550). *See* Office Action dated September 20, 2007 at pp. 2-3. The Applicant respectfully disagrees.

Jin provides a method for effecting peak reduction in a Discrete Multitone (DMT) signal comprising the steps of (1) producing a signature waveform and (2) subtracting the signature waveform from the DMT signal. *See* Abstract. In producing the signature waveform, an initial frequency waveform is passed through (a) an Inverse Fast Fourier Transform (IFFT) unit (201) to produce a time domain waveform, (b) a Waveform Restriction unit (202), (c) a Fast Fourier Transform (FFT) unit (203) to produce a frequency domain waveform, and (d) a Spectrum Restriction unit (204). *See* Fig. 2 and

paragraphs 0027 and 0028. The Spectrum Restriction unit (204), like the pulse sequence shaping filter of the present invention, is used to filter (or clip) the waveform so that it complies with certain predetermined spectral requirements. *See* paragraph 0028. ***The resulting signal, however, is not subtracted from the DMT signal. Instead, it is fed back into the IFFT unit (201), and the aforementioned process is repeated until either (1) the waveform change become insignificant or (2) a maximum number of iterations is reached.*** *See* Fig. 2 and paragraph 0028 ("The output of $S_1(k)$ of unit 204 is passed back into IFFT 201 and the process repeated on an iterative basis."). After the process is repeated (at least once), the resulting signal (*i.e.*, signature waveform) is then subtracted from the DMT signal.

In contradistinction, Claim 1 provides a ***non-iterative method***, where ***the peak-cancellation signal (as produced by the pulse sequence shaping filter) is subtracted (directly) from the modulated baseband signal, not filtered again and again*** (*e.g.*, until either the waveform change become insignificant or a maximum number of iterations is reached). *See also* Fig. 3. In the present invention, it is only necessary to filter the pulse sequence signal (p[m]) once. This is because the reference waveform (*see*, *e.g.*, Figs. 6 and 7) is designed so that the filtered clipping signal (c[m]), produced by the convolution of the reference waveform and the pulse sequence signal (p[m]), complies with both temporal and spectral constraints (*see*, *e.g.*, Fig. 4 and page 16, lines 10-20). This follows from the spectral properties of the reference waveform portrayed in Figure 7.

On the other hand, Jin's filtering method is inherently iterative. In order for Jin to achieve the spectral and temporal constraints described at paragraphs 0029-0031, the filtering process is "repeated on an iterative basis until either the waveform change becomes insignificant between successive iterations or a maximum number of iterations is reached." *See* paragraphs 0027-0028. In other words, the time domain filtering unit 202 and the frequency domain filtering unit 204 (*see* Fig. 2) have opposite effects on the processed signal, and are applied iteratively by successive conversions of the signal between the time and frequency domains. This is done based on the assumption that

the signal will eventually meet both the temporal and the spectral requirements. This is in contrast with the present invention, where the "detection" and "applying" steps of Claim 1 directly filter a signal (*e.g.*, modulated baseband signal) so that it complies with the required time and frequency constraints. Because Jin does not disclose or suggest a filter (*i.e.*, a pulse sequence shaping filter) whose result is subtracted (directly) from a modulated baseband signal, the rejection of Claim 1 should be withdrawn.
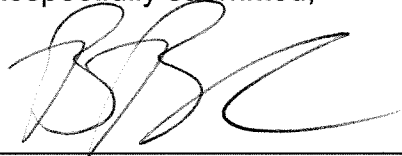
The Examiner also rejected Claims 3, 9 and 10-13 under 35 U.S.C. § 103(a) as being unpatentable over Atwater in view of Jin, Wu et al. (U.S. Pub. No. 20020172146), and/or Vannatta et al. (U.S. Pat. No. 5,930,299). Because Wu et al. and Vannatta et al. fail to make up for the deficiencies of Jin, as described above, the rejections of Claims 3 and 9, which depend from Claim 1, should be withdrawn. Furthermore, because Claims 1 and 10 include similar limitations, the rejection of Claim 10, as well as Claims 12-13, which depend therefrom, should also be withdrawn.

In view of the foregoing, the Applicant respectfully submits that Claims 1, 3 and 9-13 are in condition for allowance. Reconsideration and withdrawal of the rejections is respectfully requested, and a timely Notice of Allowability is solicited. To the extent it would be helpful to placing this application in condition for allowance, the Applicant encourages the Examiner to contact the undersigned counsel and conduct a telephonic interview.

To the extent necessary, Applicant petitions the Commissioner for a one-month extension of time, extending to January 22, 2008 (the first business day following January 21, 2008), the period for response to the Office Action dated September 20, 2007. The Commissioner is authorized to charge $120 for the one-month extension of time pursuant to 37 CFR §1.17(a)(1), and any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0639.

Respectfully submitted,

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Brian M. Berliner
Attorney for Applicant
Registration No. 34,549

O'MELVENY & MYERS LLP
400 South Hope Street
Los Angeles, CA 90071-2899
Telephone: (213) 430-6000